

Annex 1 – Extended abstract for Contributed Paper session

Paper Title	Economic crisis and global agri-food trade competitiveness: gross versus value added exports
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Contributed Paper abstract prepared for presentation at the 91st Annual Conference of the Agricultural Economics Society, Royal Dublin Society in Dublin, Ireland

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Abstract	<i>200 words max</i>
<p>One of the most important features in the international trade over the recent decades has been the increased fragmentation of the production process. This has been facilitated, in part, by the development and maturation of global value chains (GVCs). The improved availability of value-added trade data allows us to identify more clearly what fragment in the production chain is internationally competitive in a particular country. The paper examines global agri-food export performance in the light of these changes with special emphasis on the impacts of economic crisis using the concept of normalised revealed comparative advantage (NRCA) in terms of both gross exports and value-added for 61 countries over period 1995 and 2011. Systematically comparing these distributions reveals significant differences for NRCA based on gross exports versus value-added data. We find that a value-added perspective reduces the degree of NRCA for many of the most competitive countries in the agriculture and food industries. Furthermore, the underlying basis for calculating NRCA often does not matter if the objective is simply identifying the top one or two most competitive countries in a given industry. Our results indicate that economic crisis has not significant impacts on NRCA indices irrespective to applied approaches.</p>	
Keywords	Global agri-food trade, revealed comparative advantage, gross and value added exports
JEL Code	Q17
Introduction	<i>100 – 250 words</i>
<p>The international fragmentation of production has attracted much recent attention, both in international trade theory (e.g., Grossman and Rossi-Hansberg, 2008; Costinot et al, 2013) and empirical work (Feenstra and Hanson, 1999; Hummels et al, 2001; Johnson and Noguera, 2012; Baldwin and Lopez-Gonzalez, 2014; Timmer et al., 2013, 2014; Koopman et al, 2014). International trade in goods has evolved, especially during the last two decades from trading mostly goods destined for final consumption, to trading intermediate goods destined as inputs for further processing at least once prior to final consumption either domestically or traded abroad. Laipis and Tsigas (2014) show that the majority of agricultural trade can also be considered as trade of intermediate products as commodities. The paper examines global agri-food export performance in the light of these changes with special emphasis on the impacts of economic crisis. It assesses countries' agri-food export competitiveness through recently developed measures of revealed comparative advantage (RCA) that facilitate comparisons across countries, product and time. It also expands the assessment of export performance in two important dimensions. First, it moves beyond measuring</p>	

RCA based on gross exports by also calculating measures based on the domestic value added in foreign final demand. Second, we analyse systematically the differences between the two measures over the complete RCA distribution of agricultural and food exports separately.

Methodology

100 – 250 words

The most widely used indicator in empirical trade analysis is based on the concept of revealed comparative advantage (RCA) index, which was developed by Balassa (1965), and its variants. Recently, Yu et al. (2009) adopted an alternative measure to assess the dynamics of comparative advantage, utilising the NRCA index to improve certain aspects of the original RCA index in static patterns in comparative advantage in order to create an appropriate export specialisation index for comparison over space and the changes in comparative advantage and its trends over time. Yu et al. (2009) define the NRCA index as follows:

$$NRCA_{ij} = \frac{E_{ij}}{E} - \frac{E_i}{E} \frac{E_j}{E}, \quad (1)$$

where E denotes total world trade, E_{ij} describes country i 's actual export of commodity j in the world market, E_i is country i 's export of all commodities and E_j denotes export of commodity j by all countries. If $NRCA > 0$, a country's agri-food comparative advantage on the world market is revealed. The distribution of NRCA values is symmetrical, ranging from $-1/4$ to $+1/4$ with 0 being the comparative-advantage-neutral point.

The NRCA indexes are calculated for both gross exports and domestic value added in foreign final demand for both agriculture and food sectors and each of the 61 individual countries over period 1995 and 2011.

Following Brakman et al (2016) we identify four possible sector classifications. First, a sector may reveal to have a comparative advantage for both gross export. RCA and value added RCA; we label this sector strong – strong. Second, a sector may reveal to have a comparative disadvantage for both gross export RCA and value added RCA; we label this sector weak – weak. Third, therefore, a sector may reveal to have a comparative disadvantage for gross exports and simultaneously a comparative advantage for value added trade; we label this sector weak – strong. Finally, a sector may reveal to have a comparative advantage for gross exports and simultaneously a comparative disadvantage for value added trade; we label this sector strong – weak.

Results

100 – 250 words

The evaluation has focused on a comparison of two different bases for measuring NRCA: a conventional basis using gross export values and a second based on the domestic value added in foreign final demand. Our major findings are following.

First, a value-added perspective reduces the degree of RCA for many of the most competitive countries in the agriculture and food industries. Its value-added measure

is barely one-third of the measure based on gross exports. In these cases, competitive countries look less competitive, sometimes strikingly so, through the lens of domestic value added. Second, many of the most competitive countries in one of the two industries occupy top spots on both gross and value-added bases. In this sense, the underlying basis for calculating NRCA often does not matter if the objective is simply identifying the top one or two most competitive countries in a given industry. Third, we do not find evidence to favour of significant impacts of economic crisis in NRCA measures in both agriculture and food industry irrespective of gross exports and value added exports based calculations.

Discussion and Conclusion

100 – 250 words

One of the most important features in the international trade over the recent decades has been the increased fragmentation of the production process. This has been facilitated, in part, by the development and maturation of global value chains (GVCs). The rise of new global competitors and the development of GVCs have challenged the dominance of major industrial countries in trade. There is an increasing literature on value added trade on manufacturing industries and service sectors, but research on agricultural and food trade is still limited.

We present an analysis of comparative advantage using gross export trade data and value added trade data focusing on agricultural and food trade. With respect to comparative advantage the differences between the two types of data are often illustrated by means of examples using a few sectors; usually measures of RCAs calculated with gross export data are compared with RCAs calculated with value added data.

Systematically comparing these distributions shows that the distributions of NRCA calculated with gross exports and value added data are indeed significantly different from each other. Our results indicate that a value-added approach to assessing NRCA can provide further insights that are not apparent from an exclusive focus on gross exports.

